

COMMONWEALTH OF PENNSYLVANIA  
Bureau of Solid Waste Management  
Wilkes-Barre Regional Office  
September 9, 1985

Preliminary Assessment  
SUBJECT: Keyser Avenue Borehole  
Scranton, Lackawanna County

TO: William F. McDonnell  
Solid Waste Operations Supervisor

THRU: Jerome J. Lehman  
Operations Field Supervisor

FROM: Lawrence M. Sattler  
Solid Waste Specialist

ORIGINAL  
(Red)

Based on the information obtained by reviewing the files, it is my opinion  
that a site investigation should be conducted at this site.

LMS:cu

cc: J. Lehman  
L. Sattler  
Central Office  
File  
Chron.

RECEIVED  
DIVISION OF EMERGENCY & REMEDIAL RESPONSE

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Waste Management

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TABLE of MATERIALS and CONCENTRATIONS at  
LAVELLE BOREHOLE SITE

	<u>PADER Sludge Volatiles</u> <u>(mg/m3)</u>	<u>ERT Air Samples</u> <u>(ppb)</u>
Trichloroethylene (TCE)	--	1200
Tetrachloroethylene (PCE)	8000	4600
1,1,1 Trichloroethane	900	700
1,1,2,2 Tetrachloroethane	9000	1000
Toluene	--	3000
Xylene	--	1000
Benzene	300	80
Chlorobenzene	100	--
Ethylbenzene	10,000	300
Chloroform	1000	--
1,2 Dichloropropane	400	--

- Note: 1. PADER sludge volatiles are several multiples higher than ERT air sample results. The ratio increases for the more volatile components.
2. Air samples were taken at the surface. Most gases are heavier than air.

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NO. 1

The Lavelle Borehole Site is located in a mixed residential/commercial area of Lackawanna County, Scranton, Pennsylvania. The borehole is on the property known as 1620 North Keyser Avenue and is approximately twenty-five (25) feet from the residential dwelling on the premises and is immediately adjacent to a separate garage-type structure also located on this property.

The Lavelle Borehole was used by Mr. William Lavelle to illegally dispose of 3.5 million gallons of toxic and hazardous substances during a four-year period from 1976 to 1979. Mr. Lavelle was also allegedly involved in other illegal operations and was convicted on two counts of racketeering by the Pennsylvania Court of Common Pleas/Trial Court in April, 1984 for having illegally dumped hazardous substances. At the time of this writing (March, 1985), Mr. Lavelle has not yet been sentenced.

Mr. Lavelle rented a garage from the Recupero family who had resided at the 1620 N. Keyser Avenue address. The garage, located behind the residence, has a large floor drain that empties into the borehole which is next to the garage. This floor drain was used by Mr. Lavelle for illegally disposing of tremendous quantities of toxic and hazardous substances.

A family of four currently resides at the 1620 W. Meyer Avenue dwelling consisting of one senior citizen, one middle-aged adult and two small, school-aged children (6 and 7 years). One of the children has developed severe allergies and currently suffers from chronic upper respiratory system distress. Atmospheric and environmental factors influence airborne hazardous material releases from the borehole which at times have been documented to be overpowering to people in the immediate area. PADER Solid Waste Specialist, William McDonnell, and the Recupero family physician, Dr. S.L. Ross, have experienced and reported personal adverse physical reactions to random borehole emissions which occurred on several occasions while they were near the borehole.

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## II. HAZARDOUS SUBSTANCES INVOLVED (continued)

### A. Identification of Substances Involved (continued)

FADER also obtained a sample of a black semi-solid sludge from the bottom of the borehole and performed a volatile organic analysis on it. The following hazardous substances were identified at highly elevated and significant concentrations: Ethylbenzene, chlorobenzene, 1,1-dichloroethane, 1,2-dichloroethylene, chloroform, 1,2-dichloroethane, 1,1,1-trichloroethane, 1,2-dichloropropane, trichloroethylene, benzene, 1,1,2-trichloroethane, tetrachloroethylene and 1,1,2,2-tetrachloroethane.

### B. Designated Substances or Pollutants

The air and sludge samples obtained and analyzed by FADER and the air samples obtained and analyzed by EPA/HR demonstrated notable and significant concentrations of numerous toxic and potentially carcinogenic organic contaminants as listed in the U.S. EPA Priority Toxic Pollutant Listing. Specific compounds found include:

Trichloroethylene	Ethylbenzene
Tetrachloroethylene	1,1-Dichloroethane
1,1,2,2-Tetrachloroethane	1,2-Dichloroethylene
Benzene	1,2-Dichloroethane
Chlorobenzene	1,1,1-Trichloroethane
Chloroform	1,2-Dichloropropane

### C. Amounts of Materials Involved

Testimony obtained from the April, 1984 trial of Mr. William Lavelle in the Pennsylvania Court of Common Pleas confirmed that at least 3.5 million gallons of toxic and hazardous wastes were dumped illegally by Mr. Lavelle into the borehole. Some, if not all, of these wastes are entombed beneath the 1620 N. Kayser Avenue property as evidenced by airborne emissions from said borehole.

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II. HAZARDOUS SUBSTANCES INVOLVED (continued)

C. Amounts of Materials Involved (continued)

TABLE 1  
Summary of PADER 4/30/84 Air Sampling Results

Contaminant	Location	Result (mg/cu.M.)	*PSF (mg/cu.M.)	**TLV (mg/cu.M.)
Trichloro- ethylene	Borehole	261.25	0.614	270
	57' N.	.014		
	45' S.	.016		
Tetrachloro- ethylene	Borehole	942.42	0.761	335
	57' N.	.111		
	45' S.	.031		
1,1,2,2- Tetra- chloro- ethane	Borehole	262.85	0.016	7
	57' N.	ND		
	45' S.	.002		

1/10,000, 10  
LC<sub>50</sub>

1/10,000, 10  
LC<sub>50</sub>

TC L<sub>0</sub>

TABLE 2  
Summary of EPA/ERT 3/13/85 Air Sample Results

Contaminant	Sample Location		*PSF (ppb)	**TLV (ppb)	V.P.
	Borehole (ppb)	Garage Drain (ppb)			
Trichloroethylene	1200	90	113.5	100,000	47 m=100
Tetrachloroethylene	4600	630	113.5	100,000	15
1,1,1-trichloroethane	700	20	795.4	150,000	100
1,1,2,2-trichloroethane	1000	400	2.27	1,000	5
Dichlorobenzene	170	50	113.5	50,000	400 1.5
Benzene	80	ND	22.7	10,000	76
Ethylbenzene	300	60	227.3	100,000	
Toluene	3000	270	227.3	100,000	
Xylene	1000	400	227.3	100,000	

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II. HAZARDOUS SUBSTANCES INVOLVED (continued)

C. Amounts of Materials Involved (continued)

TABLE 3  
Borehole Sludge Volatiles Results (PADER) [Headspace]

Contaminant	Result (mg/M3)	*PSF (mg/M3)	**TLV (mg/M3)
1,1-dichloroethane	400	1.841	810
1,2-dichloroethylene	3000	1.723	790
1,2-dichloroethane	4000	.090	40
1,2-dichloropropane	400	.795	350
1,1,1-trichloroethane	900	4.318	1900
1,1,2-trichloroethane	500	.102	45
Tetrachloroethylene	8000	.761	335
1,1,2,2-tetrachloroethane	9000	.016	7
Benzene	300	.068	30
Chloroform	1000	.114	50
Ethylbenzene	10000	.989	435
Chlorobenzene	100	.795	350

\* PSF = Public Safety Factor  
This is an EPA/EK adjustment to the Threshold Limit Value (TLV) or Occupational Health Standard to approximate a "safe" level for chronic long-term exposures to industrial chemicals. Mathematically, the TLV is divided by 440.

\*\* TLV = Threshold Limit Value  
This refers to airborne concentrations of substances and represents conditions under which it is believed that nearly all healthy adult workers may be repeatedly exposed day after day without adverse effect. An eight-hour exposure is assumed with a sixteen-hour no exposure recovery period for the worker.

1. *perforatus* C. G. L.

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1. 11:15 PM. 2005 must absent from older detectable area.

next  
home (Residence)  
appt 100 ft

